

## REMARKS

Claim 42 has been canceled without prejudice or disclaimer. Therefore, claims 41 and 43-56 are pending in the present application and at issue.

The specification has been amended to correct a typographical error.

It is respectfully submitted that the present amendment presents no new issues or new matter and places this case in condition for allowance. Reconsideration of the application in view of the above amendments and the following remarks is requested.

### I. The Rejection of Claims 41-56 under 35 U.S.C. 103

The Office maintained the rejection of claims 41-56 are rejected under 35 U.S.C. 103 as being unpatentable over Lee et al. (*Biotechnology Letters* 18:299-304 (1996)) taken with Silver (U.S. Patent No. 4,409,329), Miller et al. (U.S. Patent No. 4,330,625), and Bisgaard-Frantzen et al. (US 2004/0023349). This rejection is respectfully traversed.

As explained in the prior response, Lee et al. and Silver disclose a process for producing ethanol from a cellulosic material, comprising hydrolyzing the cellulosic material with a cellulase to form a sugar and fermenting the sugar with a fermenting organism in a fermentation medium comprising a surfactant. See, e.g., the abstract of Lee et al. at page 299 and the abstract of Silver.

However, Lee et al. and Silver do not teach or suggest a process for producing ethanol from a starch-containing material, comprising liquefying a starch-containing material with an alpha-amylase and saccharification of the liquefied material with a glucoamylase.

Miller et al. disclose a process of producing ethanol comprising milling of grain followed by liquefaction and saccharification. Bisgaard-Frantzen et al. disclose the use of acidic fungal alpha-amylase and glucoamylase in a process to produce ethanol.

However, both Miller et al. and Bisgaard-Frantzen et al. relate to a process for producing ethanol from a starch-containing material comprising liquefaction and saccharification and do not suggest a process for producing ethanol from a cellulosic material comprising cellulose hydrolysis. Therefore, it is improper to combine Miller et al. and Bisgaard-Frantzen et al. with Lee et al. and Silver.

Moreover, Examples 1 and 3 of the instant application show that the use of a surfactant (SOFTANOL® 90 and BEROL® 087, respectively) and a glucoamylase during fermentation results in a significantly greater ethanol yield than the use of a glucoamylase alone. See Figures 1 and 3. Moreover, Example 2 of the instant application shows that the use of a surfactant (TRITON® X100) and a glucoamylase during fermentation results in a greater ethanol yield than the use of a

glucoamylase alone. Since these results are not predicted by the prior art, they are surprising and unexpected.

Examples 1-3 of the instant application also show that the use of a surfactant (SOFTANOL® 90, TRITON® X100, and BEROL® 087, respectively), a glucoamylase, and a cellulase composition during fermentation results in a significantly greater ethanol yield than the use of a glucoamylase and surfactant. Since these results are not predicted by the prior art, they are also surprising and unexpected.

In response to Applicants' showing of surprising and unexpected results, the Office stated that:

The crux of applicant's argument is that the Examples 1 and 3 of the instant application show that the use of a surfactant (SOFTANOL B 90 and BEROL 087, respectively) and a glucoamylase during fermentation results in a significantly greater ethanol yield than the use of a glucoamylase alone. Moreover, Example 2 of the instant application shows that the use of a surfactant (TRITON X100) and a glucoamylase during fermentation results in a greater ethanol yield than the use of a glucoamylase alone.

However, the claims of record are not directed to the use of the surfactants of the particular SOFTANOL B 90, TRITON X100, and/or BEROL 087 in conjunction with a glucoamylase, and a cellulase during fermentation as touted. The claims are directed to the inclusion of unidentified 'at least one surfactant'.

Therefore, these arguments are not persuasive of error in the obviousness rejection made.

The scope of the showing must be commensurate with the scope of claims to consider evidence probative of unexpected results, for example. [citations omitted] It should be clear that the probative value of the data is not commensurate in scope with the degree of protection sought by the claim.

This is respectfully traversed.

Applicants submit herewith a copy of product sheets for TRITON X100 (The Dow Chemical Company, which acquired Union Carbide) and BEROL 087 (Akzo Nobel), and information on SOFTANOL B 90 ([www.lookchem.com/chemical-dictionary/en/product\\_p/84133-50-6](http://www.lookchem.com/chemical-dictionary/en/product_p/84133-50-6)). As provided therein, each of these products comprises an alcohol ethoxylate. Based on Applicants' results, persons of ordinary skill in the art would expect to obtain an increased ethanol yield when fermenting glucose using a fermenting microorganism in a fermentation medium comprising at least one surfactant comprising an alcohol ethoxylate. Applicants therefore submit that the showing of surprising and unexpected results is commensurate with the scope of the claims.

For the foregoing reasons, Applicants submit that the claims overcome this rejection under 35 U.S.C. 103. Applicants respectfully request reconsideration and withdrawal of the rejection.

**II. Conclusion**

In view of the above, it is respectfully submitted that all claims are in condition for allowance. Early action to that end is respectfully requested. The Examiner is hereby invited to contact the undersigned by telephone if there are any questions concerning this amendment or application.

All required fees were charged to Novozymes North America, Inc.'s Deposit Account No. 50-1701 at the time of electronic filing. The USPTO is authorized to charge this Deposit Account should any additional fees be due.

Respectfully submitted,

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